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JOHN A. SMART 708 BLOSSOM HILL RD., #201 LOS GATOS, CA 95032			NGUYEN, VAN H	
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			2194	
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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/066,090

Applicant(s)

NADLER ET AL.

Examiner

VAN H NGUYEN

Art Unit

2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/25/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is in response to the application filed on January 30, 2002.
2. Claims 1-59 are presented for examination. Claims 1, 15, 30, 42, and 51 are independent claims.

### ***Information Disclosure Statement***

3. The Applicants' Information Disclosure Statement, filed November 25, 2003, has been received, entered into the record, and considered.

### ***Specification***

4. The abstract of the disclosure is objected to because it **exceeds the limit of 150 words**.  
Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

5. Claim 39 is objected to because of the following informalities:  
the phrase "a remote method invocations" should read "remote method invocations"  
Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 4 and 54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Regarding claims 4 and 54, the phrase “may be” renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). The resulting claim does not clearly set forth the metes and bounds of the patent protection desired. The use of similar exemplary language “for example” or “such as” was found to be indefinite in the following cases: Ex parte Hall, 83 USPQ 38 (Bd. App. 1949); Ex parte Hasche, 86 USPQ 481 (Bd. App. 1949); Ex parte Steigerwald, 131 USPQ 74 (Bd. APP. 1961).

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 15-20, 22-24, 26-31, 33-40, 42-46, 48, and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by **Wollrath et al.** (US 6,487,607 B1).

11. **As to claim 15:**

Wollrath teaches the invention as claimed including an improved method for making a service (*e.g., (e.g., call or request 609; fig. 6)*) available to remote clients (*e.g., client machine 601; fig. 6 & remote machines; col.4, lines 42-44*), the method comprising:

- a. creating an interface definition (*e.g., RMI 605; fig. 6*) for a particular service (*e.g., call or request for requesting invocation of remote object 608; fig. 6*), the interface definition including runtime type information (*e.g., the Java runtime system 516 includes the Java RMI system 518; col.8, lines 44-46*);
- b. implementing the interface definition as part of the particular service (*e.g., RMI 605 receives a call or a request transmitted from RMI 602 for requesting invocation of a method of remote object 608; col.9, lines 57-61 & RMI 65 returns a response 610 using generic code 607; col.10, lines 16-26*);
- c. in response to a request (*e.g., a call or request 609; col.9, lines 57-60*) received from a remote client (*e.g., a client machine 601; col.9, lines 54-55 and fig. 6*) on the particular service, automatically converting the request into a native call on the particular service (*e.g., Server machine 606 unmarshals the parameters for the*

*operation given the types of the parameters specified in the method object; col.10, lines 62-66); and*

- d. converting return values resulting from the native call on the particular service into a format appropriate for return to the remote client and sending the return values to the remote client (*e.g., marshals the return result(s) ...returns result(s) to the caller, client machine 601; col.11, lines 7-14*).

12. **As to claim 16:**

Wollrath teaches the step of implementing the interface definition includes installing implemented classes on a Web server (*col.9, lines 55-57 and col.10, lines 22-26*).

13. **As to claim 17:**

Wollrath teaches registering the interface to make the particular service available to remote clients (*col.9, lines 19-28*).

14. **As to claim 18:**

Wollrath teaches implementation of a dispatcher (*e.g., RMI 602; fig. 6*) that listens for requests (*e.g., call or request 609; fig. 6*) made on the particular service (*col.9, lines 54-61*).

15. **As to claim 19:**

Wollrath teaches the dispatcher listens for requests made in accordance with the interface definition (*col.9, lines 54-61*).

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**16. As to claim 20:**

Wollrath teaches deserializing packets received by from the remote client (*col.10, lines 62-66*).

**17. As to claim 22:**

Wollrath teaches determining a method of the particular service to be invoked (*col.10, lines 8-15*).

**18. As to claim 23:**

Wollrath teaches serializing the return values into a particular wire format (*col.10, line 21*).

**19. As to claim 24:**

Wollrath teaches the particular wire format is the same format in which the request is received from the remote client (*col.10, lines 21-22*).

**20. As to claim 26:**

Wollrath teaches the step of sending return values includes sending the return values via the Internet (*e.g., the Internet; col.8, lines 32-33*).

**21. As to claim 27:**

Wollrath teaches the step of sending return values includes using a particular method of transport (*col.11, lines 9-13*).

**22. As to claim 28:**

Wollrath teaches the method of transport is the same method of transport used by the remote client to make the request on the particular service (*col.11, lines 9-13*).

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**23. As to claim 29:**

Wollrath teaches HyperText Transfer Protocol (*col.10, lines 22-26*).

**24. As to claim 30:**

The rejection of claim 15 above is incorporated herein in full. Additionally, Wollrath further teaches a dispatcher module for listening for remote method invocations on the particular service, receiving the remote method invocations (*fig.6 and the associated text in col.9, lines 54-61 show RMI 602 contained in the client machine 601 for listening to a call or request 609 for requesting invocation method of remote object 608 and transmitting the call or the request 609 to RMI 605 included in the server machine 606*) in a predetermined wire and transport format (*e.g., RMI 602 uses a generic proxy 604 for transmitting call 609...not being type-specific so that it may invoke methods for varying types of remote objects; col.9, lines 59-62*), and invoker module for making a native call on the particular service (*e.g., server invokes the method on the remote object implementation; see step 707, fig. 7*) and returning result values (*e.g., return result(s); see step 708, fig. 7*) from the native call.

**25. As to claim 31:**

Wollrath teaches the invoker module returns results of the native call to the dispatcher module (*col.11, lines 8-14*).

**26. As to claim 33:**

Wollrath teaches a data structure for containing deserialized information from the remote method invocation and return values from the particular service (*col. 10, lines 11-15 and 61-66*).



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**27. As to claim 34:**

Wollrath teaches the dispatcher module deserializes remote method invocations into the data structure (*col.9, lines 57-67*).

**28. As to claim 35:**

Wollrath teaches the dispatcher module provides the data structure to the invoker module (*col.10, lines 48-50*).

**29. As to claim 36:**

Wollrath teaches the invoker module places return values from the native call into the data structure (*col.11, lines 8-11*).

**30. As to claim 37:**

Wollrath teaches the dispatcher module reserializes return values in the data structure and returns the reserialized return values in response to the remote method invocation (*col.11, lines 11-14*).

**31. As to claim 38:**

Wollrath teaches the dispatcher module is implemented as part of a Web server module (*col.8, lines 27-33 and col.10, lines 22-26*).

**32. As to claim 39:**

Wollrath teaches the dispatcher module listens for a remote method invocations in particular wire formats (*col.9, lines 54-61*).

**33. As to claim 40:**

Wollrath teaches the dispatcher module listens for remote method invocations received via the Internet (*col.8, lines 32-33*).

## 34. As to claim 42:

Wollrath teaches the invention as claimed including a method for making a service (*e.g., call or request 609; fig. 6*) available to remote clients (*e.g., client machine 601; fig. 6 & remote machines; col.4, lines 42-44*), the method comprising:

- a. developing an interface definition (*e.g., RMI 605; fig. 6*) to a service (*e.g., call or request for requesting invocation of remote object 608; fig. 6*) to be made available to remote clients (*e.g., client machine 601; fig. 6 & remote machines; col.4, lines 42-44*);
- b. implementing the interface definition to create an implemented interface (*e.g., RMI 602; fig.6*) to the service, the implemented interface listening for requests on the service (*fig.6 and the associated text in col.9, lines 54-61 show RMI 602 contained in the client machine 601 for listening to a call or request 609 requesting invocation method of remote object 608 and transmitting the call or the request 609 to RMI 605 included in the server machine 606*);
- c. in response to receipt of a remote method call (*e.g., a call or request 609; col.9, lines 57-60*) the service, deserializing the remote method call into native format (*e.g., Server machine 606 unmarshals the parameters for the operation given the types of the parameters specified in the method object; col.10, lines 62-66*);
- d. invoking the service by making a native call on the service in native format (*e.g., server invokes the method on the remote object implementation; see step 707, fig. 7*); and

- e. reserializing results of the native call on the service and returning the reserialized results in response to the remote method call (*e.g., marshals the return result(s) ... returns result(s) to the caller, client machine 601; col.11, lines 7-14*).

35. **As to claim 43:**

Wollrath teaches registering the implemented interface to make the service available remotely (*col.9, lines 19-28*).

36. **As to claim 44:**

Wollrath teaches the interface definition includes an invokable interface (*see fig.6*); the invokable interface enabling remote clients to cast an instance of the interface for purposes of making a remote method call on the service (*col.10, lines 41-50*).

37. **As to claim 45:**

Wollrath teaches the implemented interface includes a dispatcher module for handling remote method calls on the service (*col.9, lines 54-61*).

38. **As to claim 46:**

Wollrath teaches the step of deserializing the remote method call includes using the same wire format used to serialize the request (*col.11, lines 8-14*).

39. **As to claim 48:**

Wollrath teaches deserializing the remove method call into a data structure (*col.10, lines 18-20*).

40. **As to claim 49:**

Wollrath teaches the step of invoking the service includes passing the data structure to the service (*col.10, lines 48-50*).

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41. **As to claim 50:**

Wollrath teaches the step of returning the serialized results includes returning the serialized results using the same method of transport used to send the remote method call (*col.11, lines 8-14*).

***Claim Rejections - 35 USC § 103***

42. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

43. Claims 1-14, 21, 25, 32, 41, 47, and 51-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wollrath et al.** (US 6,487,607 B1) in view of **Dyla et al.** (Pub. No.: US 2002/0116454 A1).

44. **As to claim 21:**

- a. Wollrath does not specifically Simple Object Access Protocol packets.

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- b. Dyla teaches Simple Object Access Protocol packets (*e.g., SOAP; paras. 0079 and 0084*).
- c. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Dyla and Wollrath because Dyla's teaching would have provided the capability for encoding the information in Web service request and response messages before sending them over the network.

45. **As to claim 25:**

Refer to claim 21 above for Simple Object Access Protocol.

46. **As to claim 32:**

Wollrath teaches HyperText Transfer Protocol transport format (*col. 10, lines 22-26*).

Refer to the discussion of claim 21 above for Simple Object Access Protocol wire format.

47. **As to claim 41:**

Wollrath teaches the dispatcher module listens for HyperText Transfer Protocol posts (*col. 10, lines 22-26*). Refer to the discussion of claim 21 above for Simple Object Access Protocol requests.

48. **As to claim 47:**

- a. Dyla teaches the step of deserializing the remote method call includes deserializing a Simple Object Access Protocol request (*e.g., converts data to and from SOAP; para. 0079*).
- b. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Dyla and Wollrath because

Dyla's teaching would have provided the capability for encoding the information in Web service request and response messages before sending them over the network.

49. **As to claim 51:**

Wollrath teaches the invention substantially as claimed including a system (*see the fig. 6*) enabling a client (*e.g., client machine 601; fig. 6*) to invoke a remote service (*e.g., requesting invocation of a method of remote object 608; col.9, lines 57-61 & fig. 6*), the system comprising:

- a. a generic interface class (*e.g., a generic proxy class; abstract and col.9, line 63-col. 10, line 7*) providing client-side support (*see fig.6*) for invocation of a remote service (*e.g., invocation of a method of remote object 608; col.9, lines 54-60*) having an available interface definition (*e.g., RMI 605; fig. 6*);
- b. an interface object (*e.g., a generic proxy; col. 10, lines 8-9*) dynamically generated from the generic interface class at runtime which communicates with the remote service (*e.g., when a call is made on the proxy, the proxy's "invoke" method is passed a "remote object" which includes information about the method being invoked; col. 10, lines 8-15*); and
- c. a serialization interface which serializes data into a particular wire protocol for invocation of the remote service (*e.g., the generic code is used to do the following: look up the method based on the method identifier; unmarshal the parameters based on their types as indicated in the method object; invoke the method on a remote object implementation; col.10, lines 16-21*) and deserializes

return values (*e.g., marshals the return result(s); col.11, lines 7-14*) received from the remote service.

- d. Wollrath does teach generating an interface object, but is silent on “dynamically generated.”
- e. Dyla teaches dynamically generated (*e.g., dynamically generated proxies on the client side; para. 0035*).
- f. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Dyla and Wollrath because Dyla’s teaching would have allowed the remote clients to communicate with the server machine and make calls for requesting invocations of methods of the remote objects without concern for remote communication, protocol or data format.

50. **As to claim 52:**

Wollrath teaches the generic interface class is subclassed to provide support for particular wire formats (*col.9, lines 61-67*).

51. **As to claim 53:**

Wollrath teaches the generic interface class is subclassed to provide support for particular methods of transport (*col.10, lines 8-11*).

52. **As to claim 54:**

Wollrath teaches the generic interface class may be used with a plurality of wire formats and method of transports (*col.10, lines 41-48*).

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**53. As to claim 55:**

Wollrath teaches a subclass of the generic interface class providing support for a particular wire format and method of transport (*col.9, lines 62-67*).

**54. As to claim 56:**

Refer to the discussion of claim 21 above for Simple Object Access Protocol.

**55. As to claim 57:**

Wollrath teaches communication with the remote service includes sending HyperText Transfer Protocol posts (*col.10, lines 22-26*).

**56. As to claim 58:**

Wollrath teaches communication with the remote service includes communication via the Internet (*col.8, lines 32-33*).

**57. As to claim 59:**

Wollrath teaches communication with the remote service includes receiving responses from the remote service (*col.10, lines 21-22; col.11, lines 8-14; and fig. 6*).

**58. As to claim 1:**

The rejection of claim 51 above is incorporated herein in full. Additionally, Wollrath further teaches:

- a. obtaining an interface definition (*e.g., RMI 605; fig. 6*) of a particular service (*e.g., call or request for requesting invocation of remote object 608; fig. 6*) available to remote clients (*e.g., client machine 601; fig. 6 & remote machines; col.4, lines 42-44*), the interface definition including runtime type information



*(e.g., the Java runtime system 516 includes the Java RMI system 518; col.8, lines 44-46);*

- b. converting the call made by the client into a converted call in a wire format specified in the interface definition and sending the converted call to the particular service using a method of transport specified in the interface definition (*col.10, lines 16-22 shows the unmarshalling step performed in the server side.*

*Therefore, the call must be marshaled (converted) in the client side before it is transmitted to RMI 605 in the server side).*

59. **As to claims 2-5:**

Refer to claims 52-55 above.

60. **As to claim 6:**

Wollrath teaches the method of transport is HyperText Transfer Protocol (*col.10, lines 22-26*). Refer to the discussion of claim 21 above regarding Simple Object Access Protocol.

61. **As to claim 7:**

Wollrath teaches serializing the call into a particular wire format (*col.10, lines 16-22*).

62. **As to claim 8:**

Refer to the discussion of claim 21 above regarding Simple Object Access Protocol.

63. **As to claim 9:**

Wollrath teaches sending the converted call via the Internet (*col.8, lines 32-33*).

64. **As to claim 10:**

Wollrath teaches sending the converted call using the HyperText Transfer Protocol  
(*col.10, lines 22-26*).

65. **As to claim 11:**

Wollrath teaches sending the converted call in the manner specified in the interface  
definition (*col.11, lines 47-50*).

66. **As to claim 12:**

Wollrath teaches receiving return values in response to the converted call (*col.11, lines 8-11*).

67. **As to claim 13:**

Wollrath teaches receiving return values includes deserializing the return values (*col.11, lines 11-14*).

68. **As to claim 14:**

Wollrath teaches the proxy returning results of the remote method call to the client by performing the substeps of: receiving packets returned in response to the remote method call (*col.11, lines 8-12*); converting the packets into results in native format (*col.11, lines 11-12*); and returning the results in native format to the client (*col.11, lines 12-14*).

### ***Conclusion***

69. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- (i) Fomenko et al. (US 6813641) teaches “Teamware server working over HTTP/HTTPS connections.”
- (ii) Wei (US 5778228) teaches “Method and system for transferring remote procedure calls and responses over a network.”
- (iii) Bittinger et al. (US 5754774) teaches “Client/server communication system”
- (iv) Hill et al. (US 5724588) teaches “Method and system for network marshalling of interface pointers for remote procedure calls.”
- (v) Waldo “remote procedure calls and Java remote method invocation” 1998 IEEE, pp. 5-7.
- (vi) O’Copnnell et al. “using SOAP to clean up configuration management” 2001 IEEE, pp. 555-560.

- 70. Any inquiry or a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.
- 71. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H. NGUYEN whose telephone number is (571) 272-3765. The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The examiner can also be reached on alternative Friday.
- 72. If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Meng-Ai An can be reached on (571) 272-3756.

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73. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
74. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Any response to this action should be mailed to:**  
Commissioner for patents  
P O Box 1450  
Alexandria, VA 22313-1450



Van H. Nguyen